

### **Abstract**

The present invention relates to new hydrogels with improved mechanical properties and methods of their preparation. The hydrogels are formed from hydrophilic polymers having function hydroxyl groups and have low elasticity modulus typically less than about 10 kPa, a tensile strength above 1 MPa, an elongation above 50% which makes suitable as medical implants, in particular intraocular lenses. The hydrogels are prepared by a crosslinking method with a comparatively low concentration of hydrophilic polymer of a sufficiently high molecular weight dissolved in a good solvent.